



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/381,556	01/05/2000	Yuman Fong	MSKP031USNP	4110

21121 7590 10/23/2002
OPPEDAHL AND LARSON LLP
P O BOX 5068
DILLON, CO 80435-5068

EXAMINER

WEHBE, ANNE MARIE SABRINA

ART UNIT	PAPER NUMBER
----------	--------------

1632

DATE MAILED: 10/23/2002

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/381,556

Applicant(s)

Fong

Examiner

Anne Marie Wehbé

Art Unit

1632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Aug 5, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3, 10 6) ☐ Other:

Art Unit: 1632

DETAILED ACTION

Applicant's response to the restriction/election requirement received on 8/5/02 has been entered. Applicant's election with traverse of the species d) costimulatory factors is acknowledged. However, applicant's arguments regarding the grounds for election of species have been found persuasive. Therefore, claims directed to species a)-d) identified in the election requirement mailed to applicant's on 7/3/02 will be examined together. Claims 1-40 are pending and currently under examination in the instant application. An action on the merits follows.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

Art Unit: 1632

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-22, and 38-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-40 of U.S. Patent No. 6,051,428 (4/18/00), hereafter referred to as the '428 patent. Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons.

Applicant's claim 1 recites a method of production of an autologous vaccine to tumor cells comprising transducing the tumor cells with one or more species of a herpes simplex virus amplicon containing the gene for an immunomodulatory protein and at least one additional therapeutic gene. Claim 37 of the '428 patent recites an identical method; however, it is limited to immunostimulatory proteins selected from the group consisting of cytokines, chemokines, intercellular adhesion molecules and costimulatory molecules. Claim 37 is therefore a species of the broader claim 1 of the instant application. It is well established that a species of a claimed invention renders the genus obvious. *In re Schaumann*, 572 F.2d 312, 197 USPQ 5 (CCPA 1978). Furthermore, the particular limitations of claim 37 of the '428 patent are recited in claims 7, 10, 12, and 14 of the instant application. In addition, the limitations of instant claims 2 and 3 are recited in claims 38-39 of the '428 patent. Applicant's claim 4 recites a method for inducing a

Art Unit: 1632

protective immune response comprising the same method steps and limitations of claim 1. Claim 40 of the '428 patent is a species of claim 4, and as such renders claim 4 obvious.

Claim 38 recites a method of production of an autologous vaccine to tumor cells comprising transducing tumor cells with an HSV amplicon containing a gene for an immunomodulatory protein selected from chemokines, intercellular adhesion molecules, and costimulatory factors. Claims 39-40 recite wherein the transducing is ex vivo or in vivo. Claims 1-3 of the '428 patent are essentially identical to claims 38-40 of the instant invention. The only difference is that the '428 claims recite the additional species of cytokines. While the instant claims are slightly narrower in scope, all of their particular limitations are expressly recited in the patented claims. Thus, the instant claims are obvious in view of the particular recitations of claims 1-3 of the '428 patent. It is further noted that claims 7, 9, and 11 recite wherein the protein is a chemokine, intracellular adhesion molecule, or costimulatory factor respectively. Claims 7, 9, and 11 of the '428 patent therefore represent a species of broader claims 38 of the instant application and as such render the instant claims obvious.

Claims 1-36 of the '428 are also species of the broader instant claims 1-22. Claim 1 of the '428 patent recites a method for production of an autologous vaccine and claim 19 recites a method for inducing a protective immune responses to tumor cells by transducing tumor cells with an HSV amplicon containing the gene for an immunostimulatory protein selected from the group consisting of cytokines, chemokines, intercellular adhesion molecules and costimulatory molecules. Claims 13 and 31 of the '428 patent which depend on claims 1 and 19 respectively

Art Unit: 1632

further recite wherein the tumors cells are transduced with one or more species of amplicon comprising one or more species of immunostimulatory protein. Claims 14 and 32 recite wherein the amplicons encode and express at least two species of cytokines. Claims 1 and 4 of the instant application, as noted above, recite the same methods wherein the amplicons encode and express an immunomodulatory protein and a therapeutic protein. Claims 17 and 18 of the instant application further limit these methods to wherein the amplicons encode and express at least two species of cytokines. Thus, claims 1-36, by claiming a species of the instant claims, render the instant claims obvious. Please note that the particular cytokines, combinations of cytokines, and types of tumor cells recited by dependent claims 8-9, 11, 13, 15, and 19-22 of the instant application are specifically recited in claims 5-6, 8, 10, 12, 15-18, 23-23, 26, 28, 30, and 33-36. Thus, by teaching all the limitations of the instant claims, and further by representing a species of the broader instant claims, claims 1-40 of the '428 patent render the instant claims obvious.

Claim rejections - 35 U.S.C. 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1632

Claims 1-40 are rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 1, 4, 23, and 38 recite the limitations “immunomodulatory proteins”. Claims 2-3, 5-22, 24-37, and 39-40 depend on these claims. The word “immunomodulatory” is vague and indefinite as it is unclear what kind of effect on the immune response can be mediated by the protein. The word “immunomodulatory” is further confusing in the context of the claims as the claims are ultimately directed to the induction of protective immune responses against a tumor, whereas the “immunomodulatory” protein would appear to encompass proteins which could in fact down regulate, suppress, or tolerize immune responses. It is suggested that the applicants substitute the word “immunostimulatory” for “immunomodulatory” in the claims in order to render the claims clear and definite.

Claims 1-22, and 36-40 are further rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, and as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

Independent claims 1 and 38 recite methods for the production of an autologous vaccine comprising transducing tumor cells. Claim 36 recites tumor cells transduced in accordance with the method of claim 1. The metes and bounds of these claims are unclear in view of the limitations

Art Unit: 1632

of claims 2-3 and 39-40 respectively. The dependent claims recite wherein the tumor cells are transduced either ex vivo or in vivo. The limitation wherein the claims are transduced in vivo is confusing. The goal of the method is to produce transduced tumor cells useful as vaccines. If the cells are transduced in vivo, the methods lack the essential step wherein the transduced cells are removed from the mammal such that they are available for use as a vaccine. Further, if the methods are actually intended to read only on the production of transduced tumor cells in vivo, without their being isolated from the mammal, then claim 36 would read on tumor cells in any mammal including a human. As such, claim 36 would read on a human, which is not considered patentable subject matter under 35 U.S.C. 101. Clarification of the applicant's invention is requested.

Claims 4-6 are also confusing in their metes and bounds. Claim 4 recites a method for inducing a protective immune response to tumor cells in a patient comprising transducing tumor cells with one or more species of HSV amplicon. Claim 5 further recites wherein the tumor cells are transduced ex vivo and then reintroduced into the patient. Claim 6 recites wherein the amplicons are injected in vivo. Claims 5 and 6 if written in independent form would be complete and definite in the recitation of the necessary method steps to practice the applicant's methods. Claim 4, however, is confusing and/or lack essential steps since the applicants clearly intend for the claim to read on ex vivo tumor cells transduction and yet claim 4 lacks the essential method step recited in claim 5 wherein the tumor cells are reintroduced into the host. It is suggested that

Art Unit: 1632

applicant's claim the methods of claims 5 and 6 as independent inventions. Otherwise, clarification of applicant's invention is requested.

Claims rejections - 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3, and 7-40 are rejected under 35 U.S.C. 102(e) over U.S. Patent No. 6,344,445, 2/5/02, hereafter referred to as Bournnell et al. The applicant claims mixtures of HSV amplicons which express at least one immunomodulatory protein and one therapeutic protein, wherein the therapeutic protein may also be an immunomodulatory protein, tumor cells

Art Unit: 1632

transduced with said mixtures, and methods of producing an autologous vaccine comprising transducing tumor cells with one or more HSV amplicons comprising at least one immunomodulatory protein which is a chemokine, intercellular adhesion molecule or costimulatory molecule or one immuno-modulatory protein and one therapeutic protein, wherein the therapeutic protein may also be an immunomodulatory protein. Please note that the intended use for the tumors cells and methods for producing an "autologous vaccine" have not been given patentable weight. It is noted that the use of a product for a particular purpose is not afforded patentable weight in a product claim where the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations are able to stand alone. The MPEP states that, "... in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art." *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963)(MPEP 2111.02). Further, the intended use of the tumor cells does not constitute a step in the method as claimed. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure or composition, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976); *Kropa v. Robie*, 88 USPQ 478, 481 (CCPA 1951).

Art Unit: 1632

Boursnell et al. teaches methods of transducing tumor cells, including hematopoietic tumors, with HSV vectors encoding an immunomodulatory protein (Boursnell et al, columns 39-40, claims 1-16). Boursnell et al. further teaches that the immunomodulatory proteins include IL-1, IL-12, GM-CSF, ICAM, RANTES, and B7 (Boursnell et al., columns 7-8, and 40, claim 12). Boursnell et al. also teaches that the transduction of the cells with more than one immunomodulatory protein, such as the transduction of cells with two cytokines or with cytokines and costimulatory molecules, or with any combination of the recited immunomodulatory proteins (Boursnell et al., column 7-8). In regards to the HSV vector, Boursnell et al. specifically teaches the use of HSV amplicons to transduce the cells (Boursnell et al., column 14, lines 17-41). While it is noted that Boursnell suggests the packaging of the disclosed amplicons prior to transduction, the applicant's claims are broad and do not limit the way in which the amplicons are transduced into the target cells. Finally, Boursnell et al. teaches that the cells can be transduced in vivo, or ex vivo, and further wherein the cells transduced ex vivo are reintroduced into the patient (Boursnell et al., column 13, lines 24-50). Thus, by teaching all the limitations of the applicant's instant claims, Boursnell et al. anticipates the invention as claimed.

No claims are allowed.

Any inquiry concerning this communication from the examiner should be directed to Anne Marie S. Wehbé, Ph.D., whose telephone number is (703) 306-9156. The examiner can be

Art Unit: 1632

reached Mon-Thurs and every other Friday from 9:30-7:00. If the examiner is not available, the examiner's supervisor, Deborah Reynolds, can be reached at (703) 305-4051. General inquiries should be directed to the group receptionist whose phone number is (703) 308-0196. The technology center fax number is (703) 308-4242, the examiner's direct fax number is (703) 746-7024.

Dr. A.M.S. Wehbe



ANNE M. WEHBE PH.D
PRIMARY EXAMINER